relationship between fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a distinct change in slope, with respect to decreasing pulse width, to a nearly constant value, at a characteristic laser pulse width, said method comprising the steps of:

generating at least one laser pulse which has a pulse width equal to or less than said characteristic laser pulse width and a fluence equal to or greater than the corresponding fluence threshold; and

providing a path by which said pulse is directed to a point at or beneath the surface of the material.

56. (Amended) The method according to claim 55 wherein the material is a biologic material, the pulse width is in the range of from about 10 to about 10,000 femtoseconds, and wherein the pulse has an energy of from about 1 nanojoule to about 1 microjoule.

57. (Amended) The method according to claim 55 wherein the spot size is variable within a range of from about 1 to about 100 microns by changing the f number of the laser.

58. (Amended) The method according to claim 55 wherein the spot size is variable within a range of from about 1 to about 100 microns .

59. (Amended) The method according to claim 55 wherein the material is transparent to radiation emitted by the laser and the pulse width is from about 10 to about 10,000 femtoseconds and wherein the pulse has an energy of from about 10 nanojoules to about 1 millijoule.

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60. (Amended) The method according to claim 55 wherein the pulse width is from about 10 to about 10,000 femtoseconds and wherein the pulse has an energy of from about 10 nanojoules to about 1 millijoule.

61. (Amended) A method for laser induced breakdown (LIB) of an organic material with a pulsed laser beam, the material being characterized by a log-log relationship of fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a rapid, distinct, and substantially negative change in slope, with respect to decreasing pulse width, at a predetermined laser pulse width where the onset of plasma induced breakdown occurs, said method comprising the steps of:

generating a laser beam including at least one laser pulse which has a pulse width equal to or less than said predetermined laser pulse width; and

providing a path by which said pulse is directed to a point at or beneath the surface of the material so that the laser beam defines a spot and has a lateral gaussian profile characterized in that fluence at or near the center of the beam spot is greater than the threshold fluence whereby the laser induced breakdown is ablation of an area within the spot.

62. (Amended) The method according to claim 61, wherein the spot size is a diffraction limited spot size providing an ablation cavity having a diameter less than a fundamental wavelength size.

63. (Amended) A method for laser induced breakdown (LIB) of an organic material with a pulsed laser beam, the material being characterized by a relationship

of fluence threshold at which breakdown occurs versus laser pulse width that exhibits a rapid and distinct change in slope to a slowly varying threshold value at a predetermined laser pulse width where the onset of plasma induced breakdown occurs, said method comprising the steps of:

a. generating a pulsed laser beam including at least one laser pulse which has a pulse width equal to or less than said predetermined laser pulse width; and

b. providing a path by which said pulse is directed to a point at or beneath the surface of the material, wherein the pulse width is in a range of from about 10 to about 10,000 femtoseconds and wherein the beam has an energy in the range of from about 10 nanojoules to about 1 millijoule.

64. (Amended) A method for laser induced breakdown (LIB) of an organic material by plasma formation with a pulsed laser beam, the material being characterized by a relationship of fluence threshold at which breakdown occurs versus laser pulse width that exhibits a distinct change in slope at a characteristic laser pulse width, said method comprising the steps of:

a. generating at least one laser pulse which has a pulse width equal to or less than said characteristic laser pulse width, said characteristic pulse width being defined by the log ablation threshold of the material as a function of log pulse width position where the ablation threshold function is no longer proportional to the square root of pulse width; and

b. providing a path by which said pulse is directed to a point at or beneath the surface of the material so as to induce breakdown by plasma formation in the material.

69. (Amended) A method for laser induced breakdown (LIB) of an organic material with a pulsed laser beam, the material being characterized by a log-log relationship between fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a rapid change in slope, with respect to decreasing pulse width, to a nearly constant value, at a characteristic laser pulse width, said method comprising the steps of:

generating at least one laser pulse which has a width equal to or less than said characteristic laser pulse width where the laser pulse width is in a range of from about 10 to about 10,000 femtoseconds, and the pulse has an energy of from about 10 nanojoules to about 1 millijoule; and

providing a path by which the pulse is directed to a point at or beneath the surface of the material.

70. (Amended) A method for laser induced breakdown (LIB) of an organic material with a pulsed laser beam, said method comprising the steps of:

generating a pulsed laser beam including at least one laser pulse having a pulse width equal to or less than a characteristic pulse width, the characteristic pulse width defined by a region of a log-log relationship between breakdown fluence threshold versus laser pulse width, for said organic material, which exhibits a rapid and distinct departure from a square root dependence; and

providing a path by which said pulse is directed to a point at or beneath the surface of the material.

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